

REMARKS

Claims 14 and 18-21 have been amended better to describe the invention. More particularly, Claim 14 now specifies that the crucible has an inner surface and an outer surface and that the layer of promoter is “on at least the inside surface and/or the outside surface”. The preamble of each of Claims 18-20 has been changed to properly call for a “quartz glass crucible” rather than a “method”. The claims before the Examiner are Claims 14-16 and 18-23.

The rejection of Claims 14-16 and 21 under 35 U.S.C. § 102 as anticipated by Watanabe et al. (EP '429) is respectfully traversed. The independent claim no longer refers to “a part” of the inside and/or outside surface of the crucible. As such the claim is express that the transparent coated layer is located on the inside and/or the outside surface of the crucible. Watanabe et al. (EP '429) does not teach or suggest a crucible containing polysilicon in which a transparent coated layer containing a crystallization promoter is located on the inside and/or outside surface of the crucible. The rejection should be withdrawn.

The rejection of Claims 22 and 23 under 35 U.S.C. § 103 as unpatentable over Watanabe et al. (EP '429) and further in view of Hansen et al. (U.S. Patent No. 5,980,629) of applied to the claims as revised is also respectfully traversed. Claims 22 and 23 depend from Claim 14, which patentably defines over the primary reference for the reasons given above. These claims are also patentable and rejection should be withdrawn.

The rejection of Claims 14-16 and 21-23 under 35 U.S.C. § 103 as unpatentable over Hansen et al. (U.S. Patent No. 5,980,629) in view of Watanabe et al. (U.S. Patent No. 6,106,610) is also respectfully traversed. It is noted that the secondary reference is the U.S. counterpart of Watanabe et al. (EP '429).

The Examiner points out that the primary reference shows a crucible having inner and outer coatings with a devitrification promoter. The Examiner acknowledges that there is no indication in the primary reference of disposing a crystallization promoter in a silicon matrix. The secondary reference is cited to show such a configuration and the Examiner concludes that it would have been obvious to make such a combination “to prevent the promoter from leaking into the melt, and to improve adherence”.

Applicants respectfully submit that the rationale provided by the Examiner for the combination of references is one formed after viewing the invention in hindsight rather than one formed from anything the references themselves properly teach or suggest. Hansen et al. (U.S. Patent No. 5,980,629) is a representative example in the prior art discussed in the application and the disadvantages attendant thereto. See the section of the specification on pages 1 and 2 under the heading “Discussion of the Background”. There the reader is informed it is known to apply crystallization promoters such as an alkaline earth metal to a crucible’s inside surface but that the matter of the coating causes problems when the crucible is used to pull up single silicon crystals. The Examiner is directed moreover to the paragraph bridging pages 15 and 16 of the specification containing a discussion of an example in accordance with the present invention and a conventional crucible having a crystallization promoter loosely applied thereto. The conventional approach caused non-uniform and partial deposition of cristabolite during pulling up while the present invention permits uniform crystal layer formation with stopping of cristabolite release. See also the other comparisons between the crucible of the present invention and the prior art crucible in Examples 4 to 7 and the related values shown in the tables at pages 19 and 20. The differences and advantages therebetween are profound and they are not reasonably taught or suggested by a consideration of the references. The rejection should be withdrawn.

Favorable treatment of the application is earnestly solicited. The Examiner is requested to telephone the undersigned if additional changes are required in the case prior to allowance.

Respectfully submitted,

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